

STANDARD TYPE A MANHOLE  
FRAME & COVER SEE STD.  
MD 383.31 & MD 383.32

FRAME  
ANCHORAGE  
SEE STD.  
MD 384.02

TOP OF COVER

GRADE  
ADJUSTMENT  
RING SEE STD.  
MD 384.01

LADDER  
RUNGS  
SEE NOTE 6

ECCENTRIC  
CONE UNIT SEE  
STD. MD 384.01

RISER UNIT  
SEE STD.  
MD 384.01

JOINTS  
SEE NOTE 5

WALL REINF.  
SEE NOTE 3

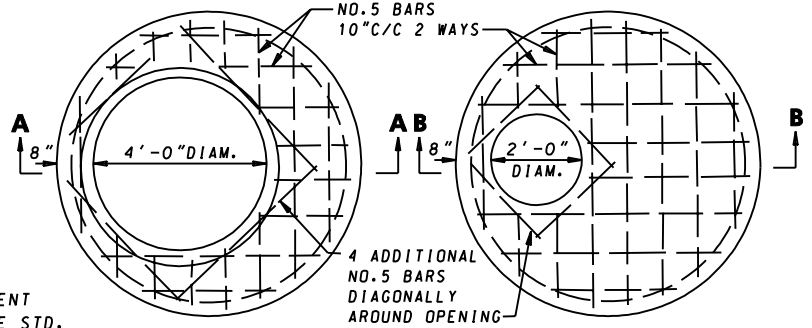
CHANNEL  
SEE NOTE 9

CONCRETE OR  
BRICK ON EDGE  
1/4" FALL PER  
FOOT

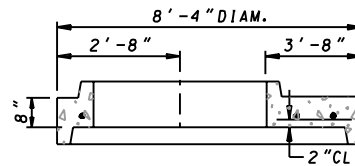
ADDITIONAL  
NO.3 BARS  
SEE NOTE 7

BASE & BASE REINFORCING  
SEE NOTE 4

PROVIDE 6" MIN. BEDDING OF NO.57  
AGGREGATE ON FIRM SUBGRADE

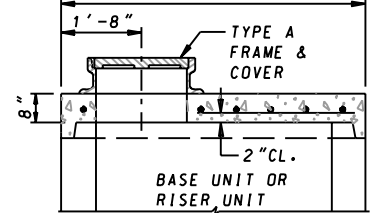


**FLATTOP REDUCER**



**SECTION A-A**

**FLAT SLAB TOP**  
(SHOWN WITHOUT FRAME & COVER)



**SECTION B-B**

**FLATTOP REDUCER**

**RISER UNIT**

**BASE UNIT**

**SECTION VIEW**

## NOTES

- MANHOLES SHALL BE CONSTRUCTED IN ACCORDANCE WITH AASHTO M 199.
- CONCRETE SHALL BE MIX NO.6 (4500 PSI).
- WALL REINFORCEMENT FOR BASE UNITS AND RISER UNITS SHALL BE REINFORCEMENT BARS OR WELDED WIRE FABRIC WITH A MINIMUM AREA OF 0.21 IN. <sup>2</sup>/FT FOR THE 84" DIAMETER MANHOLES. WELDED WIRE FABRIC SHALL CONFORM TO ASTM A 185 AND A 82. REINFORCEMENT BARS SHALL MEET ASTM A 615 GRADE 60.
- BASE REINFORCEMENT TO BE REINFORCEMENT BARS OR WELDED WIRE FABRIC WITH A MINIMUM AREA OF 0.27 IN. <sup>2</sup>/FT. THE BASE SHALL BE CAST MONOLITHIC WITH THE BASE UNIT OR JOINTED PER MANUFACTURER'S DESIGN.
- THE MANUFACTURER SHALL FORM MALE AND FEMALE ENDS OF JOINTS USING THEIR OWN DESIGN. THE JOINTS SHALL BE SEALED BY THE CONTRACTOR AND MADE WATERTIGHT USING (WHERE APPLICABLE) MORTAR, RUBBER O-RING GASKETS MEETING ASTM C 361 AND C 443 OR FLEXIBLE PLASTIC GASKETS MEETING AASHTO M 198 TYPE B.
- LADDER RUNGS SHALL BE INSTALLED IN VERTICAL ALIGNMENT AT 1'-4" MAXIMUM C/C. RUNG TYPES SHALL BE IN ACCORDANCE WITH STANDARDS MD 383.91 OR 383.92. LADDER RUNGS SHALL BE INCIDENTAL TO THE COST OF THE MANHOLE.
- WHEN THE DISTANCE BETWEEN MULTIPLE PIPE OPENING IN THE BASE UNIT OR ANY RISER UNIT IS LESS THAN 6" ADDITIONAL NO.3 BARS ARE REQUIRED AROUND OPENINGS.
- LIFT HOLES OR LIFT EYES SHALL BE APPRVED IN EACH SECTION FOR HANDLING.
- MIX NO.2 CONCRETE OR BRICK CHANNEL SHALL BE PROVIDED IN THE FIELD AND SHALL SLOPE 2" PER FOOT TOWARD OUTLET OR AS DIRECTED BY THE ENGINEER.
- THE DRIP STONE LANDING SHALL BE USED ONLY WHEN THERE ARE PIPES CONNECTED TO THE RISER UNITS. SEE STD. 384.13 FOR DETAILS.
- MINIMUM DEPTH PAYMENT PER EACH SHALL BE 10'-1" MEASURED FROM THE BOTTOM OF THE BASE UNIT TO THE TOP OF THE MANHOLE COVER. VERTICAL DEPTH PAYMENT PER LINEAR FOOT SHALL INCLUDE ALL DEPTHS IN EXCESS OF 10'-1". THE COST OF THE DRIP STONE LANDING, NO.57 AGGREGATE, GROUT, SEALANT, AND ALL NECESSARY APPURTENANCES SHALL BE INCIDENTAL TO THE PRICE BID.

SPECIFICATION <b>305</b>	CATEGORY CODE ITEMS										
APPROVED <i>Kirk G. McCall</i> DIRECTOR - OFFICE OF HIGHWAY DEVELOPMENT											
<b>SHA</b> State Highway Administration	<table> <tr> <td>APPROVAL • SHA REVISIONS</td><td>APPROVAL • FEDERAL HIGHWAY ADMINISTRATION</td></tr> <tr> <td>APPROVAL 2-22-91</td><td>APPROVAL 1-2-91</td></tr> <tr> <td>REVISED 10-1-01</td><td>REVISED</td></tr> <tr> <td>REVISED</td><td>REVISED</td></tr> <tr> <td>REVISED</td><td>REVISED</td></tr> </table>	APPROVAL • SHA REVISIONS	APPROVAL • FEDERAL HIGHWAY ADMINISTRATION	APPROVAL 2-22-91	APPROVAL 1-2-91	REVISED 10-1-01	REVISED	REVISED	REVISED	REVISED	REVISED
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**Maryland Department of Transportation**  
**STATE HIGHWAY ADMINISTRATION**  
STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES

**84" DIAMETER PRECAST MANHOLE  
FOR 54" & 60" PIPES**

**STANDARD NO. MD 384.07**